ABSTRACT OF THE DISCLOSURE

A translation system, applicable in trains, elevators, aircraft launchers, rail guns, conveyors, door openers, machine tools and servo drives, includes a first linear switch reluctance machine ("LSRM") having a stator and a translator each configured, positioned and proportioned for electromagentic engagement with the other. The system further includes an assembly for selectable application of at least one phase of a multiphasic DC excitation to the LSRM to produce a longitudinal or propulsive force between the stator and translator. The system further includes an assembly for the substantially simultaneous application of at least two phases of the DC excitation to the LSRM to produce a continual normal force between the stator and translator. A second LSRM may be provided, positioned in quadrature to the first LSRM, and in electromagetic engagement with it. A multi-phasic excitation of a stator and translator of the second LSRM produces both a guidance force for the first LSRM using error values generated by it and an additional propulsive force. Independent control of the phasic excitations for each of said propulsive, lift, and guidance forces may be provided.